



SURVIAC

Acquisition & Life Cycle Management Symposium 19 November 2008

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Information for the Defense Community 

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SURVIAC Overview

Mission & Scope

MISSION STATEMENT: Perform the functions of a full-service DoD IAC in the vital technical area of non-nuclear survivability/vulnerability.

INCLUDES:

Survivability for Aeronautical/Ground Vehicles/Ships/Spacecraft

- Survivability Design
- Survivability Technologies
- Survivability Assessments, Methodologies and Information Assurance

Weapons Effectiveness

- Conventional Weapons
- Directed Energy Weapons
- Non Lethal Weapons

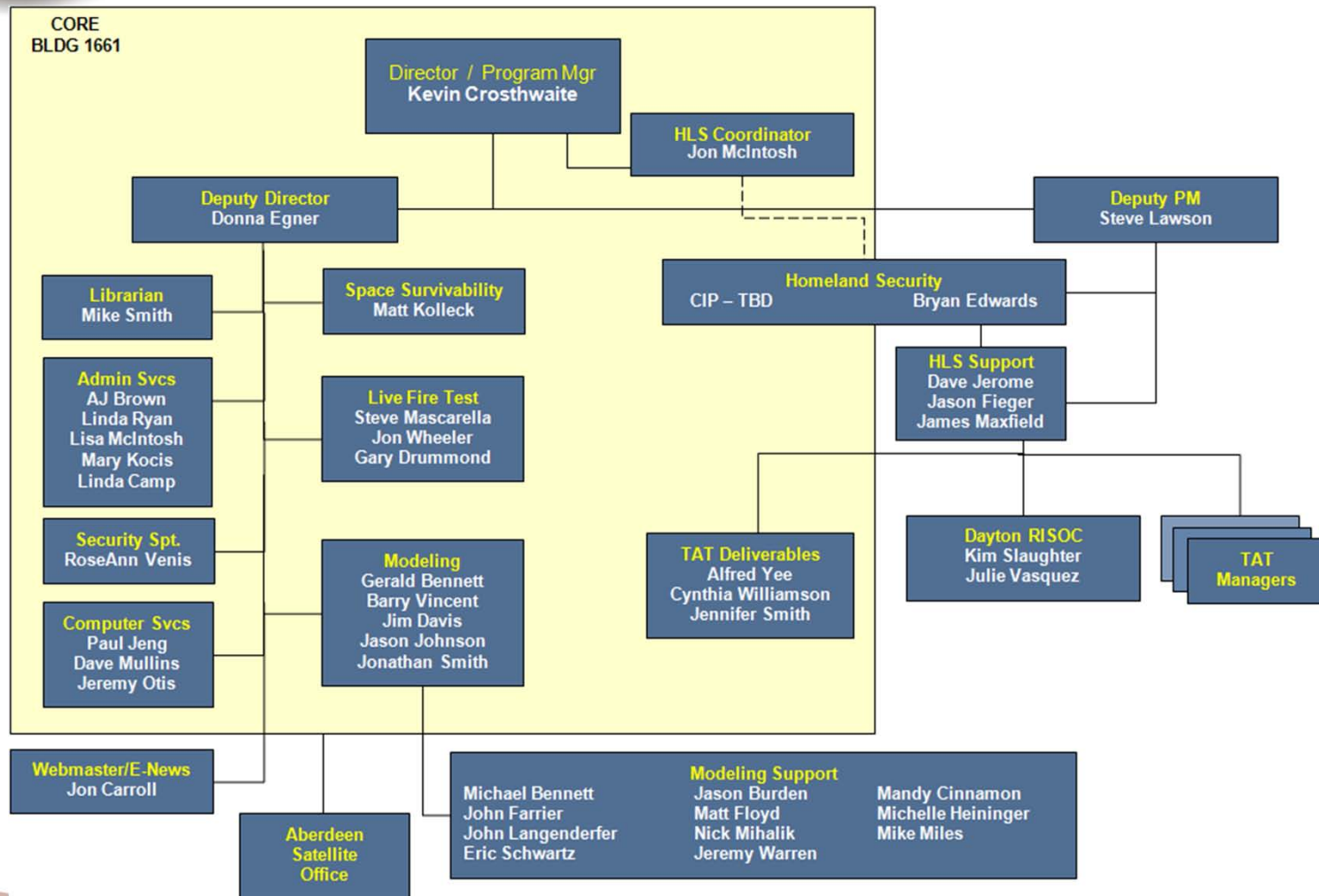
Homeland Security/Homeland Defense



Information for the Defense Community **DTIC**[®]



Organization Within SURVIAC



SURVIAC Relationships



DDR&E

DTIC

- IAC Program funding and administration

55th
Contracting
Squadron

- Contract administration

* Virtual committee from SURVIAC Charter



DOT&E



JASPO



JTCG/ME

Senior Steering Committee*

SURVIAC Technical Coordinating Group



780 TS

- Policy direction and prioritization of objectives
- Program review and guidance

- Host technical direction and surveillance



Information for the Defense Community



SURVIAC Typical Activities Per Year

- Inquiry support
 - Support over 40,000 inquiries
 - Distribute over 400 products
- Model outreach
 - Participate in over 20 modeling community meetings
 - Support new models/versions
 - Offer and teach training courses
 - Distribute models to users
- Promotion
 - SURVIAC booth present at 10-14 conferences/symposia
 - Liaison workshop
 - Survivability workshop
 - Brochures and Guides
 - Current awareness bulletins
- Technical Area Tasks
 - Analysis & testing support as required





Technical Area Tasks - Scope of SURVIAC TATs

Survivable Conventional Force Requirements	<ul style="list-style-type: none"> • Involvement in Planning Stages • Integration of Survivability Requirements • Homeland Security • Space Survivability
Survivability Technologies	<ul style="list-style-type: none"> • Technology Development and Application • Enhanced System Survivability
Optimizing Survivability and Lethality	<ul style="list-style-type: none"> • Conduct Trade-Off Analysis • Achieve Optimum Designs • Balance System Attributes
Live Fire Testing	<ul style="list-style-type: none"> • Test Planning, Guidance, and Evaluation
Methodology Advancement	<ul style="list-style-type: none"> • Modeling and Simulation • Weapon System Evaluations
Support of Combat Operations	<ul style="list-style-type: none"> • Mission Effectiveness Determination • Battle Damage Repair





Typical Information in Combat Database

IDENTIFICATION

- Service (Army, AF, Navy, USMC)
- Materiel type (aircraft, tank)
- Model & series (F-4E, M48)
- Serial number
- Incident type (loss, damage)
- Date

Scenario

- Mission type
- Incident location
- Target type
- Speed
- Altitude
- Country

Threat

- Number of hits
- Threat class (SA/AW, AAA)
- Threat type (12.7mm)
- Threat azimuth & elevation
- Threat effect (fire, blast)
- Hit location





Typical Information in Combat Database

Damage	Casualties	Repair Data	Misc
<ul style="list-style-type: none">• Vehicle Subsystem Damage (Listing of subsystems and major components damages)• Operational Effect (crashed; aborted)• Survivability Features Involved (armor; fuel tank foam)	<ul style="list-style-type: none">• Number• Crewman Function• Status (WIA;POW)• Protective Devices• Wound Location	<ul style="list-style-type: none">• Repair Level• Total Man-hours• Total Down Time• Parts	<ul style="list-style-type: none">• Narrative (?)• Equipment Sketch (?)• Photos (?)• Vehicle Damaged in Earlier Incident (?)• Other vehicles involved in this incident (?)

Note: All categories of data may not be available in each incident depending on the amount of information available in source material.



Survivability Products

- MANPADS Workshop and Report
- S/V Countermeasures Handbook (3 Volume Set)
 - Developed by JASPO Susceptibility Reduction Subgroup and Covers
 - Signature and detection
 - On-board, off-board and supporting ECM
 - Human factors, tactics and T&E
- Advanced Material State-of-the-Art Report (SOAR)
 - Material classes – metals, ceramics, polymers, composites for enhanced performance, soldier protection, hardening, and signature reduction
- Converted MIL HDBK 336 to SURVIAC Technical Report in COR Review
- Initiated Geometric Target SOAR





Lethality Products

- Missile Warhead & Propellant Response SOAR completed
- Directed Energy Weapons SOAR
- Initiated Nonlethal Weapons SOAR
- MANPADS workshop & report



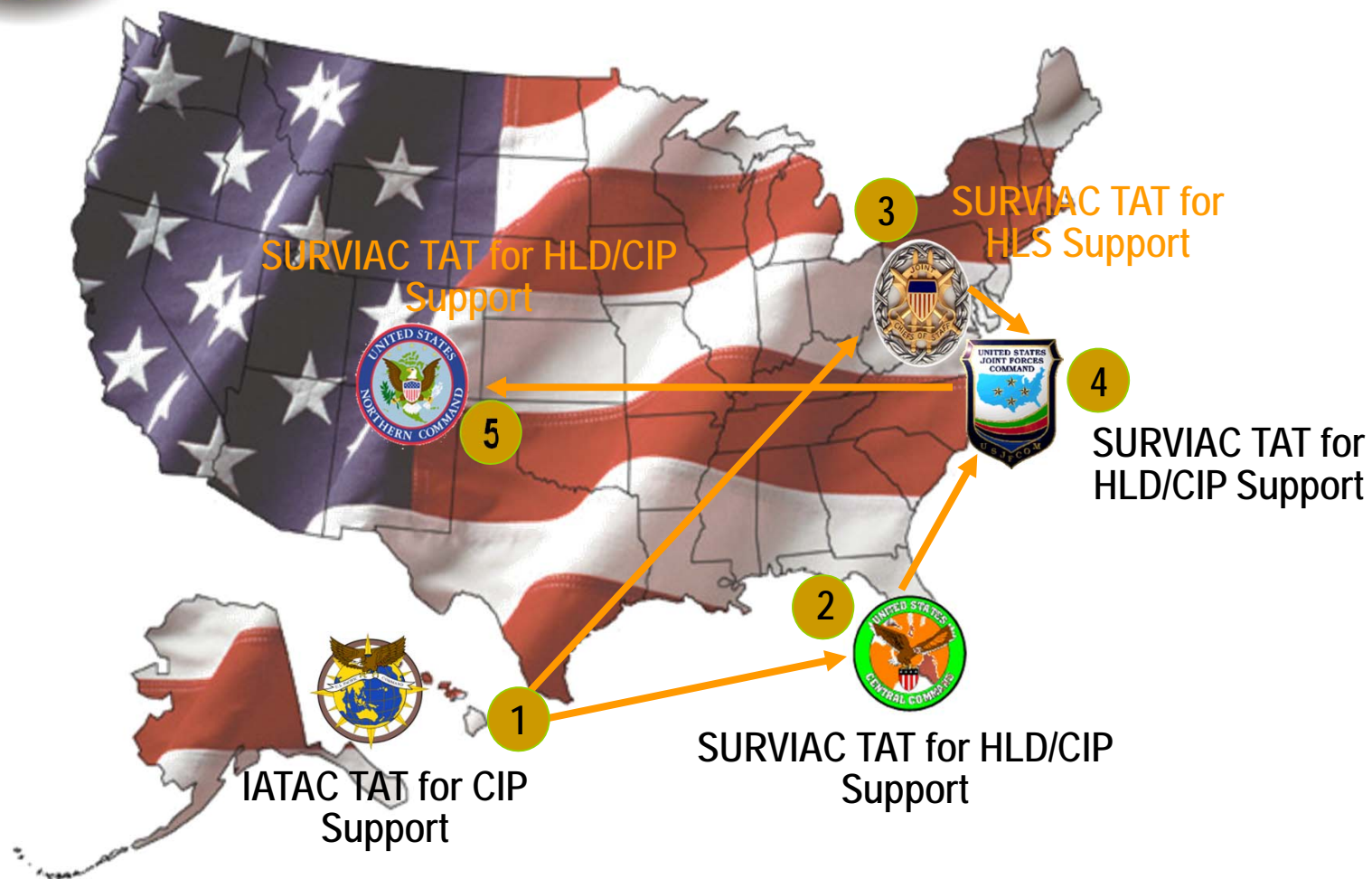
The Critical Mission Areas Are at the Heart of the National HLS Strategy

Mission Area	Administration Vision
Intelligence & Warning	Enhance intel community's capacity to <i>"connect the dots"</i> , providing <i>real-time actionable information</i> to: policymakers & law enforcement agencies (federal, state, local), and the private sector - based on the review and analysis of HLS information.
Border and Transportation Security	Create <i>"one face at the border"</i> -- including "smart border" initiatives -- to manage who and what enters the homeland while facilitating the legal flow of people, goods, and services.
Domestic Counter-Terrorism	<i>Redefine law enforcement mission and analytical capabilities</i> to focus on prevention of terrorist attacks within the U.S.
Protection of Critical Infrastructure and Key Assets	Implement a <i>comprehensive national CIP plan</i> (including vulnerability assessments) forging unprecedented level of cooperation throughout all levels of government and private sector.
Defending Against Catastrophic Threats	Coordinate <i>CBRN counter-measures</i> (at all levels of gov't, including private sector) as part of a <u>national</u> effort to prepare for, prevent, and respond to CBRN threats -- including consolidation, synchronization, and prioritization for R&D.
Emergency Preparedness and Response	Create <i>fully integrated national emergency "all hazards" response systems</i> that have complete incident awareness and C2, ensuring responders are properly equipped, trained, exercised.





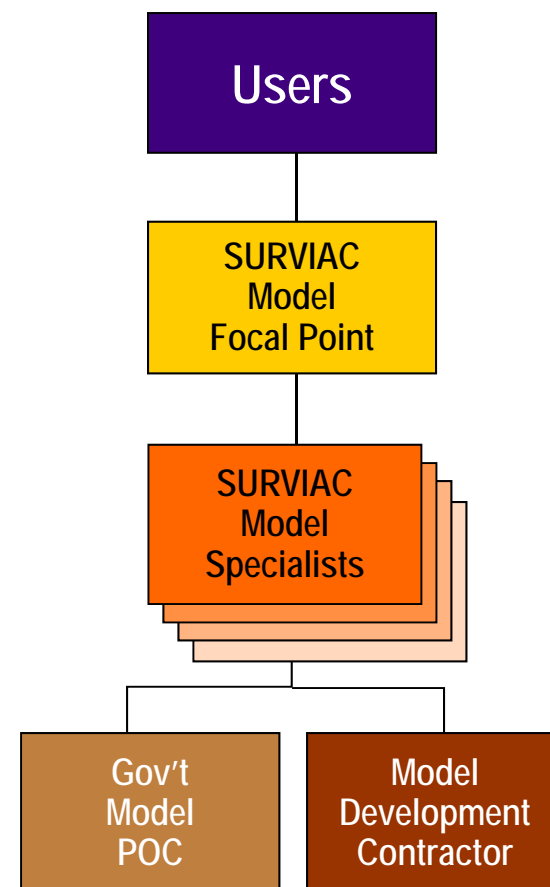
Leveraging STI Across IACs





Modeling Services

Information Exchange	<ul style="list-style-type: none"> • Promote use/knowledge of approved models • Announce new model versions • Support model users groups • Provide training on-site at SURVIAC • Conduct introductory workshops
Technical Inquiries	<ul style="list-style-type: none"> • Advise on installation • Provide test data, test results • Collect and distribute datasets • Record distributions • Check need-to-know • Provide advice on model applications, algorithms, limitations, and options
Configuration Management Support	<ul style="list-style-type: none"> • Maintain standard version of models • Distribute models and documents • Receive software change requests (SCRs)/suggestions • Update and verify models • Distribute approved changes





Models In Distribution

AIRADE	Airborne Radar Detection Model
ALARM*	Advanced Low Altitude Radar Model
BLUEMAX	Aircraft Flight Path Generator
BRAWLER	Air Combat Model
BRL-CAD	Target Geometric Description Program
COVART*	Computational Vulnerability Area Tool
DREAM	Directed Radio Frequency Energy Assessment Model
ESAMS*	Enhanced Surface-to-Air Missile Engagement Model
FASTGEN	Fast Shotline Generator
FATEPEN	Fast Air Target Encounter Penetration Program
IVIEW	Graphical User Interface for Output
JSEM	Joint Service Endgame Model
JTEAM	Joint Threat Engagement Analysis Model
LELAWS	Low Energy Laser Weapon Simulation
MIL AASPEM II (MIL II)	Man-In-the-Loop Air-to-Air System Performance Evaluation Model
RADGUNS*	Radar Directed Gun System Simulation
TRACES	Terrain/Rotorcraft Air Combat Evaluation Simulation

(PACAM8, P001A, HELIPAC, SCAN & LTM have been archived)





Reference Libraries

General Survivability Library

- Symposia Proceedings
- Test Reports
- Combat Operations Data & Analyses
- ABDR and UAV Collections
- Threat Information
- JASPO & JTCG/ME Publications
- Combat Damage Data & Analyses
- Specifications - Standards - Handbooks
- Movies/Video Tapes - Combat/Ballistic Tests

Vehicle Signatures Library

- Radar Cross Section
- Infrared
- Acoustic
- Low Signature Design

Combat Evaluation Library

- Special Operations Analyses
- Evaluation of Military Operations
- Equipment Development and Evaluations
- Memoranda on Operations
- Naval Gunfire Support Missions

Laser Library

- Test Reports
- Symposia Proceedings
- Analyses
- Vulnerability Reports
- Laser Weapon Reports
- High Power Microwave Reports



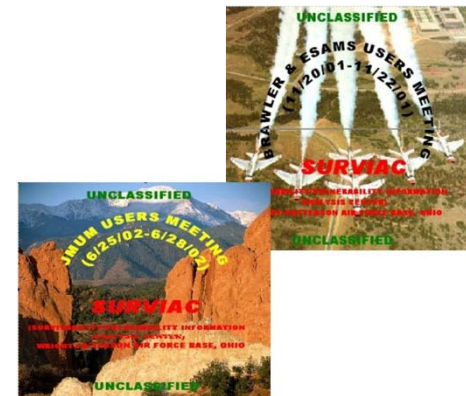
**Total Holdings Exceed
30,433 Retrievable Items**





Modeling Products

- Prepared Individual Model Training Notebook
- Model Meeting Minutes on CDs
 - JMUM, JIMM, ESAMS, Brawler, RADGUNS
- RADGUNS Sensitivity Study



* As of 30 September 2002





Summary

- SURVIAC Is Established and Operating
- A Wide Range of Resources and Services Are Available
 - Aircraft Survivability Models, Documentation and Databases
 - Reference Libraries in Key Survivability Technology Areas
 - Combat and Test Databases
 - Technical Inquiry and Special Study Support
- SURVIAC Is User-friendly
 - Inquiries Answered Promptly
 - Numerous Technical Area Tasks On-going
 - User Response Positive

We Welcome Your Inquiries!





Contact

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